WHAT IS CLAIMED IS:

1. A method comprising:

measuring a first battery voltage of a first battery that is connected to an actual load impedance;

calculating the actual load impedance;

if the actual load impedance differs from a characterizing test load impedance for which capacity vs. voltage characterizing battery data was obtained for a second battery, then computing a translation between the first battery voltage and voltages in the capacity vs. voltage characterizing data for the second battery, the computing the translation including using a logarithmic ratio of the characterizing test load impedance and the actual load impedance; and

computing a corresponding battery capacity of the first battery, using the translation and the capacity vs. voltage characterizing data for the second battery.

2. The method of claim **1**, in which the calculating the actual load impedance comprises:

measuring a first load current; and

dividing the first battery voltage by the first load current to obtain the actual load impedance.

3. The method of claim **1**, further comprising obtaining the capacity vs. voltage characterizing data for the second battery.

4. The method of claim **3**, in which the obtaining the capacity vs. voltage characterizing data for the second battery includes using published capacity vs. voltage data provided by a battery manufacturer.

5. The method of claim **3**, in which the obtaining the capacity vs. voltage characterizing data for the second battery includes:

discharging the second battery through the characterizing test load impedance during a time period;

measuring the second battery terminal voltage and the characterizing test load current at determinable times during the time period; and

calculating the charge removed from the second battery by exactly or approximately integrating the characterizing test load current.

6. The method of claim **5**, further comprising:

obtaining the capacity vs. voltage characterizing data for a plurality of second batteries; and

combining the capacity vs. voltage characterizing data for the plurality of second batteries.

7. The method of claim **6**, in which the combining the capacity vs. voltage characterizing data for the plurality of second batteries includes performing a regression on the capacity vs. voltage characterizing data for the plurality of second batteries.

8. The method of claim **1**, in which the computing the translation includes translating the first battery voltage to be comparable to the voltages in the capacity vs. voltage characterizing data for the second battery.

9. The method of claim **8**, in which the translating the first battery voltage comprises calculating an adjusted voltage, *Vadj*, in which

$Vadj = Vobs + b * \log(\frac{R2}{R1})$, and in which *R2* is a value of the characterizing test load impedance, *R1* is a value of the actual load impedance, *b* is a coefficient obtained from characterizing the second battery, and *Vobs* is a value of the measured first battery voltage.

10. The method of claim **9**, in which the computing, using the translation, the battery capacity comprises reading a capacity, in the capacity vs. voltage characterizing battery data, that corresponds to the adjusted voltage, *Vadj*.

11. The method of claim **9**, further comprising computing the coefficient *b*, wherein *b* is obtained from a slope of terminal voltage vs. logarithm of load impedance data for the second battery.

12. The method of claim **1**, in which the computing the translation includes translating the voltages in the capacity vs. voltage characterizing data for the second battery to be comparable to the first battery voltage.

13. The method of claim **12**, in which the translating the voltages in the capacity vs. voltage characterizing data for the second battery comprises calculating a scaled voltage, *Vscl*, in which $Vscl = Vtest + b*\log(R1/R2)$, for each voltage, *Vtest*, in the test battery characterization capacity vs. voltage, wherein *R2* is a value of the characterizing load impedance, and *R1* is a value of the actual load impedance, and *b* is a coefficient obtained from characterizing the second battery.

14. The method of claim **13**, in which the computing, using the translation, the battery capacity comprises reading a capacity, in a scaled representation of the capacity vs. voltage characterizing battery data, that corresponds to the measured first battery voltage.

15. The method of claim **13**, further comprising computing the coefficient *b*, wherein *b* is obtained from a slope of terminal voltage vs. logarithm of load impedance data for the second battery.

16. The method of claim **1**, in which the using the capacity vs. voltage characterizing data for the second battery includes using a lookup table.

17. The method of claim **1**, in which the using the capacity vs. voltage characterizing data for the second battery includes using a fitted equation.

18. The method of claim **1**, in which at least one of the computing the translation and the computing the corresponding battery capacity of the first battery is performed within an implantable medical device.

19. The method of claim **1**, in which at least one of the computing the translation and the computing the corresponding battery capacity of the first battery is performed by an external remote interface that is communicatively couplable to an implantable medical device.

20. The method of claim **1**, in which the computing the corresponding battery capacity of the first battery comprises computing an unused battery capacity remaining in the first battery.

21. The method of claim **1**, in which the computing the corresponding battery capacity of the first battery comprises computing an already used amount of the battery capacity of the first battery.

22. A computer readable medium including instructions for performing the method of claim **1**.

23. A system comprising:

a load impedance;

an implantable first battery, coupled to the load impedance;

a battery terminal voltage measurement circuit, coupled to the first battery to measure a first battery voltage;

a load impedance measurement circuit, coupled to the load impedance to measure an actual load impedance; and

a processor circuit, communicatively coupled to the battery terminal voltage measurement circuit and the load impedance measurement circuit, the processor associated with a separate or integral memory circuit to store capacity vs. voltage characterizing data obtained from a second battery under a characterizing test load impedance, the processor including instructions to compute a translation between the first battery voltage and voltages in the capacity vs. voltage characterizing data for the second battery, including using a logarithmic ratio of the characterizing test load impedance and the actual load impedance, and using the translation to compute a corresponding battery capacity of the first battery using the capacity vs. voltage characterizing data for the second battery.

24. The system of claim **23**, in which the load impedance comprises operational circuitry of an implantable cardiac rhythm management device.

25. The system of claim **23**, in which the first battery comprises a lithium/carbon monofluoride battery.

26. The system of claim **23**, in which the load impedance measurement circuit comprises a load current measurement circuit to measure load current, and wherein the load impedance measurement circuit is configured to determine the actual load impedance from a ratio of the first battery voltage to the load current.

27. The system of claim **23**, in which the memory circuit stores capacity vs. voltage characterizing data for the second battery obtained from published capacity vs. voltage data provided by a battery manufacturer.

28. The system of claim **23**, in which the memory circuit stores capacity vs. voltage characterizing data for the second battery obtained from discharging the second battery through the characterizing test load impedance during a time period, measuring the second battery terminal voltage and the characterizing test load current at determinable times during the time period, and calculating the charge removed from the second battery by exactly or approximately integrating the characterizing test load current.

29. The system of claim **28**, in which the memory circuit stores capacity vs. voltage characterizing data for the second battery that is obtained for a plurality of second batteries and combined.

30. The system of claim **23**, in which the processor includes instructions to compute the translation, including translating the first battery voltage to be comparable to the voltages in the capacity vs. voltage characterizing data for the second battery.

31. The system of claim **23**, in which the processor includes instructions to compute the translation, including translating the first battery voltage, comprising calculating an adjusted voltage, *Vadj*, in which $Vadj = Vobs + b * \log(\frac{R2}{R1})$, and in which *R2* is a value of the characterizing test load impedance, *R1* is a value of the actual load impedance, *b* is a coefficient obtained from characterizing the second battery, and *Vobs* is a value of the measured first battery voltage.

32. The system of claim **31**, in which the processor includes instructions to compute the battery capacity, using the translation, comprising reading a capacity, in the capacity vs. voltage characterizing battery data, that corresponds to the adjusted voltage, *Vadj*.

33. The system of claim **31**, in which the processor includes instructions to compute the coefficient *b*, wherein *b* is obtained from a slope of terminal voltage vs. logarithm of load impedance data for the second battery.

34. The system of claim **23**, in which the processor includes instructions to compute the translation, including translating the voltages in the capacity vs. voltage characterizing data for the second battery to be comparable to the first battery voltage.

35. The system of claim **30**, in which the processor includes instructions to translate the voltages in the capacity vs. voltage characterizing data for the second battery comprising calculating a scaled voltage, *Vscl*, in which *Vscl* = *Vtest* + *b**log (*R1*/*R2*), for each voltage, *Vtest*, in the test battery characterization capacity vs. voltage, wherein *R2* is a value of the characterizing load impedance, and *R1* is a value of the actual load impedance, and *b* is a coefficient obtained from characterizing the second battery.

36. The system of claim **35**, in which the processor includes instructions for computing the battery capacity, using the translation, the computing comprising reading a capacity, in a scaled representation of the capacity vs. voltage characterizing battery data, which corresponds to the measured first battery voltage.

37. The system of claim **35**, in which the processor includes instructions for computing the coefficient *b*, wherein *b* is obtained from a slope of terminal voltage vs. logarithm of load impedance data for the second battery.

38. The system of claim **23**, in which the memory circuit includes the capacity vs. voltage characterizing data for the second battery as a lookup table.

39. The system of claim **23**, in which the memory circuit includes the capacity vs. voltage characterizing data for the second battery as a fitted equation.

40. The system of claim **23**, in which the processor is located within an implantable medical device.

41. The system of claim **23**, in which the processor is located within an external interface unit that is communicatively couplable to an implantable medical device.

42. The system of claim **23**, in which the processor includes instructions for computing a remaining capacity of the first battery.

43. The system of claim **23**, in which the processor includes instructions for computing an already used capacity of the first battery.